# USER MANUAL

## (Operating instructions)

## ACUCOMB AC/V2 edition “BETTER FUTURE“

## variant LIGHT

Indicator of areas of reduced electrical resistance of intact skin

Manufacturer:

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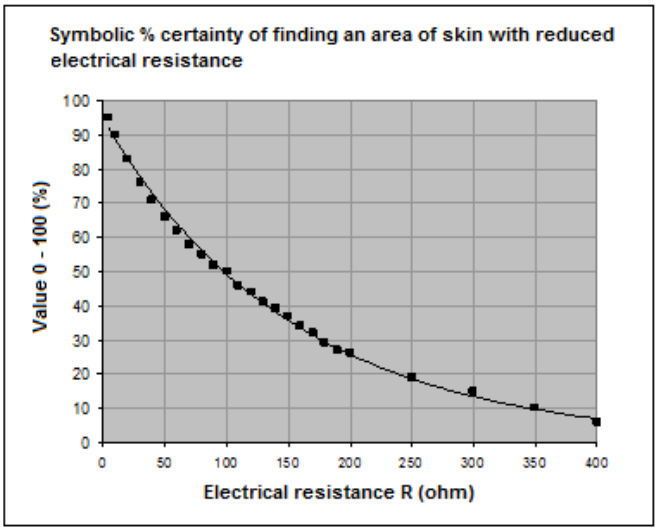
# 1. The stated purpose and basic description of the device

The purpose of the device ACUCOMB AC/V2 edition "BETTER FUTURE" variant LIGHT (fig. 1) is to provide technical conditions for the electrical seeking out and indication of small areas – points on intact skin (usually called "active skin points" and mostly identical to acupuncture points) which are distinguished by specific electrical properties (primarily reduced electrical resistance and reduced electrical impedance compared to its surroundings). The seeking out of these small skin areas (points) is carried out by sufficient, non-damaging pressure by an attached electrode which ends in a ball-shaped tip. The result of the combined mechanical and (subliminal) electrical irritation of the relevant small skin area (point) with reduced electrical resistance is its reliable and objective localization. At the same time, on a 100-degree measuring scale, the value is indicated which is the result of the effect of the mechanical and electrical quantities at the given point of reduced resistance of the skin (see the following graphs in fig. 2), and it is conversely higher as the the resistance of the indicated point of skin is lower (the indication of the point), but likewise it is higher, the greater the pressure on the ball-shaped tip electrode, which is laid on the active skin point.

*Fig.1: Device ACUCOMB AC/V2 edition "BETTER FUTURE" variant LIGHT – picture.*



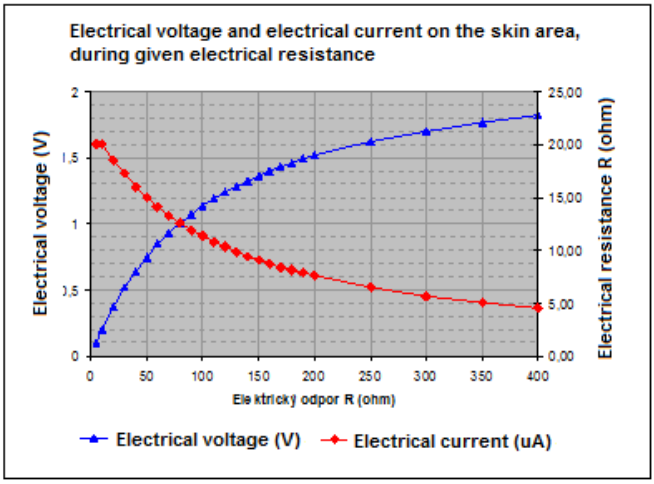




*Fig. 2: Device ACUCOMB AC/V2 edition "BETTER FUTURE" variant LIGHT – graphs showing the functions of the device.*

The device ACUCOMB AC/V2 edition "BETTER FUTURE", variant LIGHT is fully controlled by microprocessors, which primarily means even data interpreted by the analogue measuring instrument is first processed by the computer, and evaluated in such a way that it is completely accurate and always provides the maximum necessary information. The analogue measuring instrument itself excels with its sufficient size, high level of accuracy, and suitable hand movement dynamics. For operating the device, a single revolving and push-button control is used. Using the device is therefore very simple and problem-free. Besides its visual output, the device also provides a microprocessor-synthesized sound indication. Acupuncture methods often require that the relevant electronic devices for seeking out and measuring in acupuncture points are equipped with metal bowls or plates connected to the negative pole of the power supply of the device. For this reason, the device ACUCOMB AC/V2 edition "BETTER FUTURE" variant LIGHT is above-standard, equipped with one built-in metal bowl of large dimensions. The device is powered by a built-in battery with a long life span. This battery may be charged from the USB port of any computer, or with the help of a mains adapter with a USB port.

**While the device is being charged from the USB port of a computer, or from a USB charger connected to the mains, it must not be used.**

## 2. The manufacturer of the device

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## 3. The purpose of the user manual

The purpose of this manual is to provide the users of the device, and the relevant responsible organizations, with basic essential information necessary for the service and safe operation of the device. If the user or responsible person has any doubts or uncertainties, it is important that they contact the manufacturer, or an authorised distributor, without delay.

Recipients of this manual are all users of the device, as well as responsible organizations which use the device in any way, or are responsible for its operation.

This user manual must accompany each device, and must be accessible to all persons whose work is in any way connected with the device in question.

## 4. Warranties, technical service and operation of the device

The device ACUCOMB AC/V2 edition "BETTER FUTURE" variant LIGHT is provided with a warranty, in compliance with the legal regulations in effect, for a period of 24 months from the day of sale, unless otherwise stated in the relevant purchase contract.

Any warranty claim will be realized through the agent in the relevant country and region, who sold the device to the user. The faulty device must be sent, insured, by post or by using a registered courier service, including any auxiliary equipment, in appropriate packaging which sufficiently protects the sensitive measuring device against impact and vibration; the package must be marked "Fragile". In a warranty claim, it is necessary to provide the requisite claim information (the address of the user or, if applicable, the sender of the device, phone and also possibly mail details, a precise description of the defect, proof of purchase of the device with the manufacturing code highlighted and the date of sale shown, as well as the stamp and the legible signature of the seller). Any device which shows a defect demonstrably covered by the warranty will be

repaired free of charge and immediately sent back.

Any post-warranty service must of course be paid for; otherwise it is subject to the same conditions.

The warranty is extended for the period of time during which the device was under repair. The warranty is invalid if the device was not used in accordance with the accompanying documentation and in accordance with the related applicable legal provisions, regulations, standards and normal, generally accepted ways of using electronic devices. Similarly, the warranty does not cover any possible damage caused by misuse or improper use of the device, or damage caused by servicing by a person not suitably qualified and knowledgeable about using the device. The warranty also does not cover damage caused by fire, water, static electricity, power surges, accidents, mechanical damage, unauthorized tampering with the device, improper installation, empty or leaking batteries, the results of normal wear and tear, or consequences of force majeure.

Consumable material and auxiliary equipment for the device are not covered by the stipulated warranty conditions.

Other conditions of the validity of the warranty are specific to medical devices: medical devices should be subject to regular functionality and safety inspections; these inspections must be carried out exclusively by the manufacturer or by an authorized service agent. The manufacturer stipulates the time period of these inspections in accordance with the anticipated life span of the built-in batteries, i.e. a time period of 3 years. Any servicing of the device must be carried out only by the manufacturer, or by an authorized service agent. From the point of view of the legal requirement of complete traceability (vigilance) of medical devices, it is essential that the manufacturer of the devices knows the end user of the device, or, if applicable, the relevant responsible organization.

The persons servicing the device must be familiarized with the use of the device at least to the extent of this User Manual. There are no special qualifications required for the persons servicing the device,

but there is a presumption that they are capable of using electrical medical devices, and that they are working under the supervision of a health-care professional.

The life span of the device is set as 10 years.

## 5. Safety instructions

The device ACUCOMB AC/V2 edition "BETTER FUTURE" variant LIGHT has been designed and manufactured for the safest possible use. Users of this device must have available the information provided by this user manual, and other information provided during operator training or in connection with the execution of the relevant related methods, as well as legal provisions.

**The device must not be used:**

- for any other purpose than that for which it is intended,
- **if the device is being charged from the USB port of a computer, or from a USB charger connected to the mains,**
- in an outdoor environment during adverse weather conditions, if the required operating conditions cannot be met (temperature 5 to 45°C, maximum humidity 90% at 25°C, without an increase in air flow or dust, in accordance with ČSN 33 2000-3 (a Czech electrotechnical regulation),
- in an environment where there is a high risk of injury from electric shock (e.g. a damp or wet environment, or an environment with moving, unsecured mechanical objects),
- in an environment where there is a high risk of explosion,
- in an environment where there is a high risk of fire,
- during unauthorized technical modifications,
- in unsuitable power supply conditions,
- in the absence of a fully responsible user, the proper execution of the appropriate methods, or in the absence of qualified and

knowledgeable service staff,

- **in a situation where the device or the relevant related method may endanger the patient/client, or their legitimate interests, or if applicable the operator or any third party, or where there is a risk of any other harm.**
- The skin of the body parts which come into contact with the device must be fully intact, so that contact with the device or any parts thereof (the electrodes) does not pose any risk to the patient or other persons coming into contact with the equipment.
- The device must be used only in a sufficiently stable position. The falling of any part of the device must be effectively prevented.
- It is essential to regularly monitor the integrity of all parts of the device, especially electric cables and the sheathed parts of the device.
- Only original parts must be used as part of the equipment, and no modifications must be carried out, other than those explicitly carried out or authorized by the manufacturer.
- The device ACUCOMB AC/V2 edition "BETTER FUTURE" variant LIGHT is a medical device, therefore it should be subject to regular functionality and safety inspections. These inspections are required in all EU countries by the relevant legal provisions. The user, or if applicable the responsible organization, is in charge of the proper implementation of these inspections. These functionality and safety inspections must be carried out only by the manufacturer of the device, or by a person authorized by them who is suitable qualified, trained and equipped with the necessary calibrated measuring equipment. The manufacturer stipulates the time period of these inspections in accordance with the anticipated life span of the built-in batteries, i.e. a time period of 3 years.
- The user of the device ACUCOMB AC/V2 edition "BETTER FUTURE" variant LIGHT is obliged to protect the device against the risk of fire, in a manner similar to any other electrical devices. Any excessive increase in the temperature of the device (or any

parts thereof) is reason for its immediate shutdown and disconnection from the mains. Immediately afterwards, a professional repair service must be arranged.

- During operation, the device must not be sealed in an airtight manner.
- Entry of foreign objects and liquids into the device must be prevented; likewise regarding unwanted shocks and sudden changes in temperature.
- Where there is a risk of condensation (an accumulation of airborne water vapours as a result of moving from a cool environment to a warmer one) the device must not be switched on until it is completely dry.
- The covers of the device must be removed only by the manufacturer or by a person appointed by them, who is authorized to carry out a technical service. Similarly, no one may dismantle, repair, modify or otherwise interfere with the device. By ignoring this warning, the user of the device not only stands to make the warranty void, but also puts themselves in danger of wilful injury or other harm.
- Before cleaning or disinfection of the device, or any parts thereof, the device must be switched off. The detachable mains supply of the adapter – the charger of the built-in bateries – must be completely disconnected, both from the mains and from the device.
- During cleaning and disinfection, only gentle and tried-and-tested cleaning and disinfection products must be used. In no case may any of these liquids be allowed to penetrate the device, or any of its closed (sheathed) parts.

- The detachable mains supply of the adapter (charger) of the device ACUCOMB AC/V2 edition "BETTER FUTURE" variant LIGHT must not be located in a place where it could be broken or forcibly pulled out of the mains socket, or from the socket on the rear panel of the device unit.

**Special warning:**

**It is absolutely essential to avoid any diagnostic conclusions which were not unambiguously verified by standard medical diagnostic procedures, and which could lead to any harm whatsoever to the patient/client (incorrect treatment, omission or delay of necessary medical procedures, causing unfounded fears etc.)!**

**Using the device ACUCOMB AC/V2 edition "BETTER FUTURE" variant LIGHT must never become a reason for neglecting or delaying other necessary medical care procedures!**

The manufacturer of the device ACUCOMB AC/V2 edition "BETTER FUTURE" variant LIGHT is not liable for any damage arising from failure to comply with all the listed requirements, or from a disregard for the principles of medical ethics, qualifications or the findings of medical science.

# 6. The technical characteristics of the device

| | |
|---|---|
| Medical classification | A class IIa medical device in accordance with Council Directive MDD93/42/EEC (equivalent to NV ČR 336/2004 Coll.) |
| Electrotechnical classification | A device with an internal power source (battery Ni-MH 2 x 1.2 VDC, 2,100 mAh), which is charged, using a charger (adapter), from an external power source (mains AC power supply 230 V / 50 Hz; after adjustment by the manufacturer also 115 V / 60 Hz) or charged from the USB port of any computer.<br><br>**Use of the device while it is connected to the mains using a mains adapter–charger, or using a PC, is prohibited.**<br><br>Regarding protection against injury by electric shock, the mains adapter–charger itself is a class II device. |
| Charger (USB adapter) | Belkin, model F8Z222ea or another, equivalent, type<br><br>**Warning: The charger (mains adapter) is not a medical device!** |
| Electrotechnical standard used | ČSN EN 60 601 – 1 (or IEC 601 – 1) |
| Classification of the auxiliary parts of the electrical medical device | BF (in accordance with standard ČSN EN 60 601–1 or ICE 601-1) |
| Classification regarding protection against penetration by water or solids | IP 40 (in accordance with IEC 60 529) |
| Classification for operation: in premises: | permanent,<br>indoors, normal, without increased risk |

| | |
|---|---|
| Temperature | Operating: 5 to +45°C (without condensation)<br>Storage: -10 to +50°C |
| Relative humidity | Operating: 15 to 90 % (without condensation)<br>Storage: 5 to 95 % |
| Atmospheric pressure | Operating: 425 to 809 mmHg<br>Storage: 120 to 809 mmHg |
| Sterilization: | The device is not intended for sterilization. |
| Power input | 30 mW during operation |
| Securing the power supply | A secure internal battery source as well as the creation of an electrical fuse by a meander in the printed circuit. |
| Electrical voltage produced by the device and applied to the intact skin of the patient/client | Max. 2.4 V |
| Electrical current produced by the device and applied to the intact skin of the patient/client | Max. 25 micro-amperes |
| Weight | The whole device set including packaging: 1.5 kg<br>The whole device set including packaging: 1.2 kg |
| Dimensions | Device unit: 190 x 137 x 103 mm |
| Plastic sheathing material | ABS (acrylonitrile-butadiene-styrene) |
| Surfaces of the metal parts | Brass, silver-plated brass, silver, anodized aluminium |

## 7. Contraindications associated with the use of the device

**It is absolutely essential to avoid any diagnostic conclusions which were not unambiguously verified by standard medical diagnostic procedures, and which could lead to any harm whatsoever to the patient/client (incorrect treatment, omission or delay of necessary medical procedures, causing unfounded fears etc.)!**

**Using the device ACUCOMB AC/V2 edition "BETTER FUTURE" variant LIGHT must never become a reason for neglecting or delaying other necessary medical care procedures!**

There are no direct risks from using the device ACUCOMB AC/V2 edition "BETTER FUTURE" varianta LIGHT, but from the perspective of precaution it is necessary to consider the following aspects:

- Using the device is absolutely contraindicated in a case when the subjectively evaluated diagnostic conclusions cannot be unambiguously confirmed by standard medical diagnostic procedures, which might result in various types of harm to the patient/client (neglecting necessary care, improper subsequent care, omission or delay of necessary medical procedures, causing unfounded fears etc.)!
- Using the device is absolutely contraindicated in all cases where there would be a risk to the patient associated with the mechanical application of the metal electrode with the ball-shaped tip on to the skin.
- Using the device is absolutely contraindicated in all cases where the patient's skin is in any way damaged in the places where the electrode is to be applied.
- Use of the device is absolutely contraindicated in cases of risk of a serious allergic or toxico-allergic reaction by the patient/client to the metal of the electrodes, or in cases of individual intolerance to them.

- Use of the device is absolutely contraindicated if complete disinfection of the electrodes to be applied to the patient has not been ensured. Disinfection must be carried out with recognized and suitable disinfectants.
- Use of the device is relatively contraindicated in the case of patients with an implanted electrical stimulator (most often a pacemaker) or any other electrical substitute which affects vital bodily functions (e.g. the electronically controlled administration of insulin). Use of the device is also contraindicated in the case of patients whose important bodily functions are monitored or controlled by electronic devices connected to the patient's body (e.g. in an intensive care unit). The electrical voltage and electrical current produced by the device do not exceed 2.4 Volts and 25 micro-amperes, but even so it is not possible to completely statistically exclude the possibility of a fault in the functioning of the electronic devices or vitally important implants.
- Use of the device is absolutely contraindicated in the case of a patient who has a serious medical condition which requires completely different treatment. These are, for example, circulatory uncompensated cardiac patients, patients with coronary insufficiency, a pre-coronary state, recent myocardial infarction, serious acute cardiac rhythm disorders, patients with an acute central brain injury, patients who are in shock as a result of injury and/or are bleeding heavily, patients with serious infections, patients in an acute paroxysmal state, patients with hyper-tonic or hypo-tonic crisis, patients with a glycemic crisis, patients in anaphylactic shock or with serious symptoms of allergic reactions, acutely intoxicated patients in a serious state, etc.
- Pregnancy: here it is a local and relative contraindication, related only to the woman's abdominal area where the foetus is developing. The possibility of it being affected by a voltage of 2.4 V applied to intact skin, and a maximum current of 25 micro-amperes, is extremely unlikely, especially if most of the contact measurements take place away from the abdominal area.

- Oncological illnesses and serious pre-cancerous conditions: in most of these cases the localized site of the disease can be identified, so the contraindication is local and relative. Also, it is unlikely that such a small electrical voltage and current could, by some physical mechanism, affect healthy or damaged tissue cells.
- Serious ischemic diseases of vital organs: again we are dealing with relative contraindication, associated with a hypothetical and highly unlikely possibility of undesirable biological effects from such negligible values of electrical voltage and current.
- Cardiac rhythm disorders, disorders of the electrical conduction system of the heart and any associated heart disease: again, the application of such a small electrical voltage and current should not result in a disruption of the electrical conduction system of the heart. Also, it is a relative and hypothetical contraindication of a local character.
- Serious neurological and paroxysmic diseases: here, in theory (but this is highly unlikely) there may be, as a result of applying voltage and current to an area of the head, interference with the central nervous system (CNS). This is a local contraindication. The electrodes can be applied a safe distance away from the localization of the CNS.
- Recent thrombosis: this is a relative, local and temporary contraindication.
- Menstruation: this is a relative, local and time-limited contraindication.

**Using the device is prohibited in cases of immediate danger to life. It is also prohibited in states of vegetative instability and/or serious mental illness, where the application of a non-standard method may cause an undesirable reaction in the patient/client.**

## 8. Description of the device

The device ACUCOMB AC/V2 edtion "BETTER FUTURE" variant LIGHT is composed of the device unit itself (fig. 3, legend in table 1) and auxiliary equipment (fig. 3),

which includes:

- a grey coiled cable with an integrated hand-held differential probe ending in a silver spherical electrode with a diameter of 3 mm; the other end of the cable ends in a red-coloured safety banana which is designed to be plugged into the socket of the same colour on the rear panel of the device (also see fig. 3),
- a black, highly flexible straight cable with an integrated non-differential silver-plated cylindrical electrode; the other end of the cable ends in a black-coloured safety banana which is designed to be plugged into the socket of the same colour on the rear panel of the device (fig. 3),
- a USB charger / adapter, 230V/50Hz, 5 VA, (fig. 3) designed for charging the built-in batteries directly from the mains (fig. 3),
- a cable for charging the built-in batteries through the USB port of any computer (fig. 3),
- An outer metal bowl with a supply cable (fig. 3),
- A cable for symbolic connection to a PC (without an electrical connection).

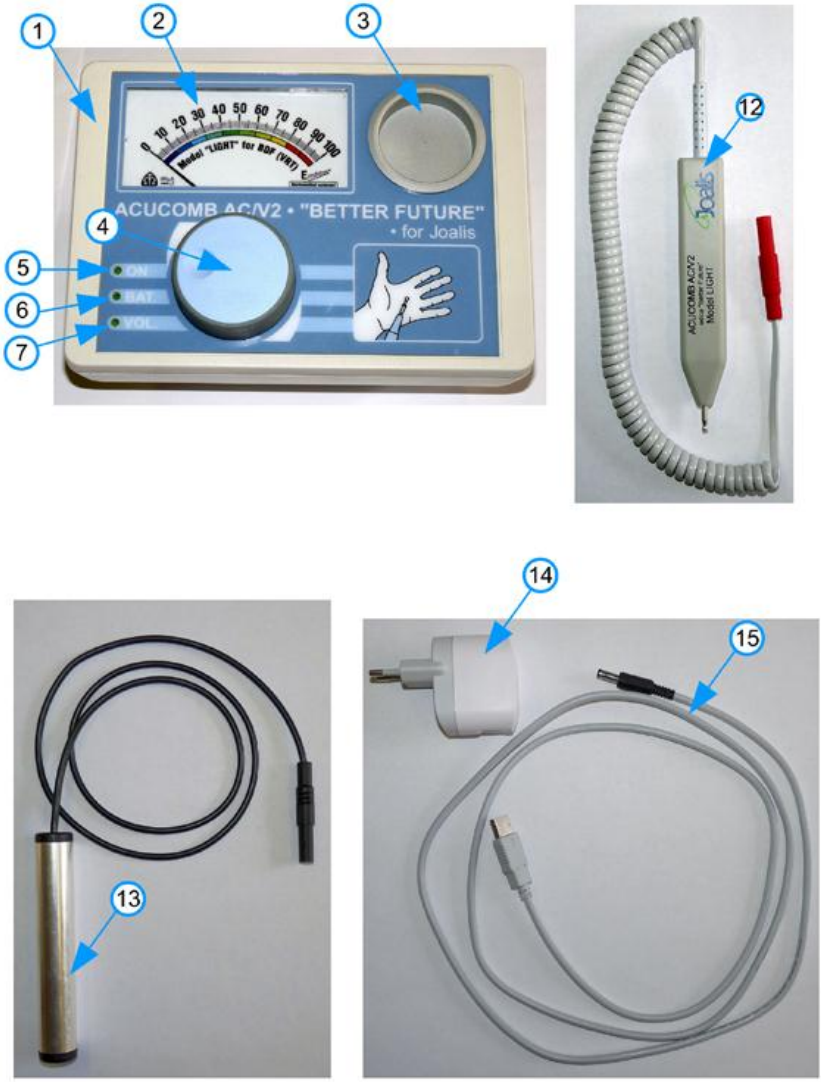
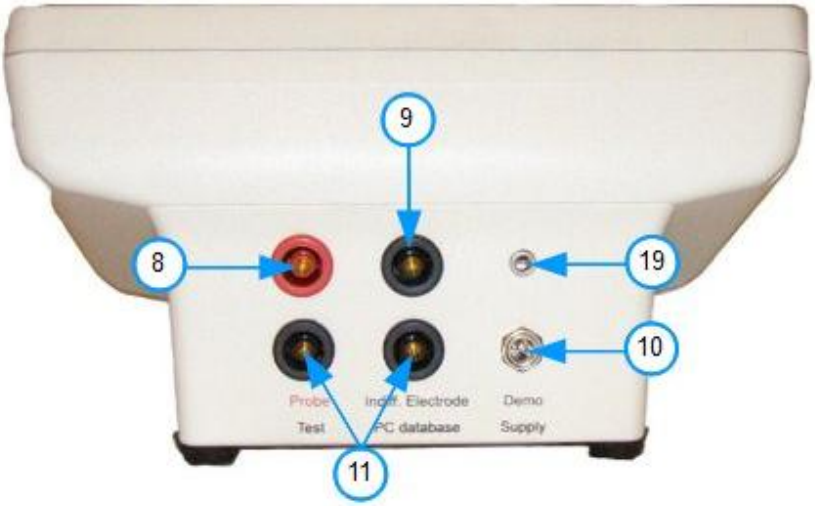
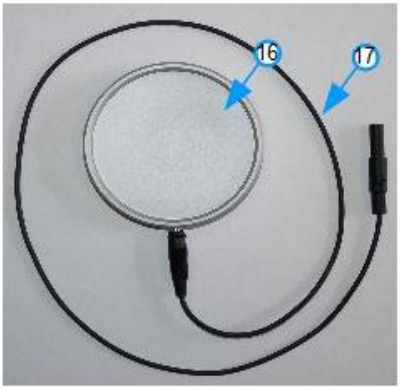



*Fig. 3: The device and its accessories*

*Fig. 3 – continued: The device and its accessories*



*Tab 1: Description of parts of the device*

| No. | Description |
|---|---|
| 1 | Plastic sheathing of the device unit |
| 2 | Hand-held analogue measuring device |
| 3 | Metal bowl galvanically connected with the non-differential electrode (9, 13) and therefore with the negative pole of the device power supply |
| 4 | Control push-button for setting the sensitivity of the device, and the sound volume |
| 5 | Power on indicator |
| 6 | Low battery indicator |
| 7 | Change in sound volume indicator |
| 8 | Socket for differential probe (red) – hand-held probe ending in a ball-shaped tip (see no. 12) |
| 9 | Socket for non-differential electrode – a silver-plated cylinder held in the client's/patient's hand (see no. 13) |
| 10 | Socket for the mains adapter-charger cable (see nos. 14, 15) |
| 11 | Socket for connecting the external metal bowls – labelled Test (see nos. 16 and 17) and for symbolic connection to PC – labelled PC database (see no. 18) |
| 12 | Differential probe ending in a ball-shaped tip |
| 13 | Non-differential hand-held cylindrical electrode |
| 14 | Mains adapter-charger |
| 15 | Charging cable for the mains adapter-battery charger |
| 16 | External metal bowl |
| 17 | Cable for connecting external metal bowls |
| 18 | Cable for symbolic connection to PC (without an electrical connection) |
| 19 | Demonstration panel connection (above-standard equipment) |

# 9. Operating the device

**Preparation of the device prior to measurement:**

The device itself must first be connected to the necessary cables and probes. The connectors for this can be found on the rear panel of the device. The red socket (fig. 3, number 8) is for connecting the red banana of the differential probe (fig. 3, number 12). The black socket, which is found beside the red socket (fig. 3, number 9) is for connecting the black banana of the non-differential probe (fig. 3, number 13). Another black socket (fig. 3, number 11) is for connecting the external bowl (fig. 3, number 16) using the connecting cable (fig. 3, number 17). The connecting cable is connected to the device using the safety banana, and afterwards it slots into one of the two side openings in the external metal bowl. Furthermore, it is possible to symbolically connect the device to a PC computer. It must be stressed that this is a purely symbolic connection, which is not an electrical connection and therefore no electrical current or electrical data flows through it. The connection is also not galvanized. It is a purely symbolic connection which is required by some health-care professionals for reasons which the manufacturer of the device cannot explain. The cable shown is used (fig. 3, number 18); its banana slots into another black socket (fig. 3, number 11) labelled PC database, and the other end of the cable (fig. 3, number 18) in the form of a USB connector slots into any USB port on the computer. Warning: this method does not create any galvanized or electronic data connection. The cables in the black sockets are not interchangeable.

**Working with the device:**

The device ACUCOMB AC/V2 edition "BETTER FUTURE" variant LIGHT is, in spite of its high technical level, easy to operate. The device is switched on by pressing the large revolving button (fig. 3, number 4) on the front panel of the device. Briefly press and release the button, and the device switches on (the power on indicator lights up). Now the device is ready for operation. The operator holds the differential probe in their hand, and the person being analyzed holds

the non-differential electrode in their hand.
If the device is left unused for a longer period of time, it will switch itself off. But if we want to switch the device off immediately (which, due to the minimal energy consumption from the built-in batteries, and the automatic switching off, is not usually necessary) then we have to press the RESET button, which is found on the bottom of the device, near its production label - see figure 4.

DEVICE FOR ACUPUNCTURE MEASUMERENT
ACUCOMB AC/V2 PORTABLE "Better Future" edition, model LIGHT
Manufactured in Czech Republic
EMBITRON s.r.o., Certified by ISO 13 485: 2003
Classification IIa in accordance with EU Council Directive 93/42/EEC
Standard IEC 60 601-1
Internal electrical power source 2,4 VDC
Input power 30 mW
Insulation class II ,type BF
Degree of protection IP 30
Year of manufacture 2011
SN 005
CE 1014
reset

*Fig. 4: The bottom part of the device, with the production label and a non-arresting button.*

If necessary, it is possible to change the sensitivity of the device while it is switched on. Turning the control button to the right increases the sensitivity, and turning it to the left decreases the sensitivity.

In order to better indicate the measured value, the device generates a tone which corresponds to the value shown on the analogue measuring device. The intensity of the sound can be regulated. We press the buttom, and the device begins to emit a constant tone. By turning the button right/left while holding it down we can increase/decrease the intensity of the sound.

To facilitate and visually simplify the indication of the active skin point, the device is equipped with a quality hand-held measuring device. The physical meaning of the indicated value is expressed in

chapter 1 of this User Manual. Ideally, the sensitivity of the device should be set in such a way that, during an application of the electrode tip (the probe) of a pressure of around 10 N, to a well indicated active skin point, the hand of the indicator moves in the area of green- to yellow-coloured decades, being between 50 and 80 degrees (%) of the indicator scale. Lower values (coloured blue) usually represent insufficient pressure; perhaps the ball-shaped tip had not been placed on an active skin point. Values coloured red to crimson (80 and above) mean there is too much pressure on the tip of the probe, and possibly indicate skin that is too damp and perhaps even damaged – in this case the work with the indicator must terminate immediately.

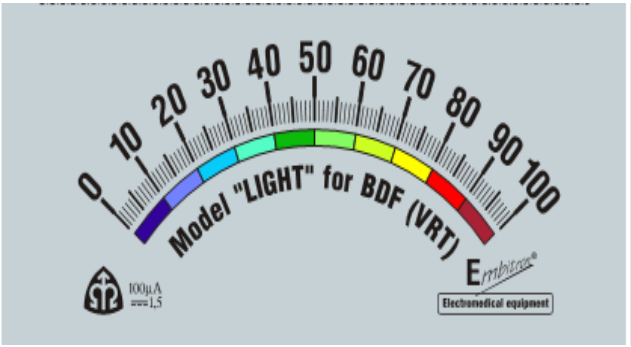



*Figure 5: The indicator scale.*

## 10. Maintenance of the device

The device contains an internal battery which must be regularly recharged. If the battery is empty, the empty battery indicator will begin to flash. The batteries are charged using the charging cable (fig. 3, number 15) which slots into the charging socket (fig. 3, number 10). The other end slots into the USB port of any computer, or into a mains charger (fig. 3, number 14).

Completely discharging the built-in battery is always harmful, and shortens its life span. On the other hand, it is impossible to charge the battery too much, so there should not be any fear of charging it. If the built-in battery cannot be charged, then it has probably reached

the end of its life span, and must be changed. This operation must be carried out exclusively by an authorized service agent, who will at the same time carry out an overall inspection of the functionality and safety of the device, as required by the legal regulations for all medical devices. The life span of the built-in battery is dependent on regular and sufficient charging; under normal conditions it should be 3 years.

**Warning:**

**While the integrated battery is being charged, either from a computer or from the mains adapter, the device must not be used!**

Normal routine maintenance by the operator consists only of regular and continuous inspection of the integrity of those parts of the device which are important to its functionality and safety; as well as keeping the device clean and essential disinfection of the electrodes, if required. The operator must also heed all safety instructions listed in this manual. At the same time, the operator of the device must pay attention to any perceptible changes in the appearance and function of the device, or its individual parts. If any serious irregularities are noticed, an authorized service agent must be called.

## 11. Cleaning and disinfection

The device (the whole device set) must be kept in a clean condition, and excessive fouling or contamination of it must be effectively prevented.

If, in spite of all precautions, contamination of the applied part, i.e. the electrode, or any other part of the device results, or if it is necessary to effectively disinfect the device before using it on another patient/client, we can carry out a disinfection of any part of the device by using normal, but recognized disinfectants:

- which do not contain alcohol,
- which do not leave behind traces of colour, or cause discolouration or damage to the outer surfaces of the device,
- which allow gentle application.

Examples of suitable disinfectants are Sanosil super Ag25, or Incidur Foam.

During longer idle periods, the device should be covered or packed in protective foil packaging. During normal operation, it is necessary to regularly wipe or vacuum clean dust which clings to the device or any of its parts, using gentle and dry instruments. If more substantial fouling needs to be removed, a soft mull, cloth or sponge should be used, slightly moistened with water or a mild cleaning agent; cleaning agents containing alcohol, or abrasive cleaning agents, must never be used.

Important notes:

***During cleaning or disinfection of the device:***

- ***the device must be switched off and the built-in battery charger must be disconnected from the mains by pulling it out of the electrical socket, or disconnecting it from the USB port of the computer which in this case serves as a power source for charging the batteries,***
- ***it must be ensured that no liquids or particles penetrate the closed, sheathed parts of the device.***

## 12. Environmental protection and disposal of the device

The device ACUCOMB AC/V2 edition "BETTER FUTURE" variant LIGHT does not have a directly negative effect on the environment. Operating the device, with a negligible electrical input of 30mW, does not significantly affect the environment. Special attention, in accordance with local legal regulations in force, must be paid only to the disposal of the built-in battery. The device must not be disposed of as municipal waste.

At the end of its life span, when the device is decommissioned, it is recommended that it be dismantled into:

- the metal electrodes and other metal parts (bowls),
- the battery,
- the plastic parts,
- the built-in electronic component itself (the printed circuit boards, the cables and the measuring device).

The dismantling is easily done by disconnecting the metal electrodes and cables, and then dismantling the device unit and removing the battery and other embedded parts.

The metals are disposed of according to local rules and legal regulations regarding aluminium, brass, copper and silver; the batteries are subject to specific disposal requirements and the other parts are disposed of as electrical equipment. The plastic parts are made of ABS plastic.

No part of the device constitutes hazardous waste. The device does not produce any waste which would unduly burden the environment.

***Important notice:***

***The life span of the device, when taking into account normal wear and tear, ageing of materials and most importantly its ethical ageing, to which all electronic devices are subject, is set as 10 years.***

For this time period, technical service, as well as any necessary delivery of spare parts, is guaranteed.

## 13. Packaging

The device and its auxiliary equipment is packaged in individual inert plastic protective foil packaging. For normal transportation, the device is also placed into a paper transportation box, in which the device, as well as the auxiliary equipment, is fixed in conventional reinforcing plastic or paper packaging material, chosen especially to protect the device from shock. The transportation box must be suitably labelled. The transportation box with the device set must contain:

- The device ACUCOMB AC/V2 edition "BETTER FUTURE" variant LIGHT, basic unit (fig. 1) .....1 piece
- A differential hand-held probe with a silver-plated spherical electrode on its tip, and a coiled supply cable.....1 piece
- A non-differential cylindrical silver-plated probe with a straight, highly flexible cable.....1 piece
- A cable for connecting the device to an external metal bowl …..1 piece
- A cable for linking the connector designed for charging the built-in battery, ending in a USB connector.....1 piece
- A USB charger / mains adapter.....1 piece
- A cable for symbolic connection to PC (without an electrical connection).....1 piece
- A cable for connecting the demonstration panel (only as part of above-standard optional accessories).....1 piece
- The operating instructions.....1 piece

## 14. Storage

The following conditions apply for storing the device:

Temperature -10 to + 50°C, without any sudden changes.
Relative air humidity max. 95 % at 25°C.
Atmospheric pressure 120 to 809 mmHg.

## 15. Transportation

The transportation box containing the device set can be transported in conventional covered vehicles, but it must be secured in such a way that shocks, impacts and vibrations are not transmitted to the device. The packaged device in the transport crate must be treated as a fragile consignment; it must not be turned upside down, and the required storage conditions must be adhered to.

**Because of the pointer analogue measuring instrument embedded in the device, the device must not be subjected to mechanical shocks, impacts and vibrations.**

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